

Appl. No. 10/726,460
Amtd. Dated May 3, 2006
Reply to Office Action of April 8, 2006

REMARKS

This is a full and timely response to the non-final Office action mailed February 8, 2006. Reexamination and reconsideration in view of the foregoing amendments and following remarks is respectfully solicited.

Claims 32-38 are now pending in this application, with Claim 32 being the sole independent claim. Claims 32-38 have been cosmetically amended herein to even more clearly recite the subject matter of the instant invention, and Claims 1-31 and 39-42 have been canceled. No new matter is believed to have been added.

Rejections Under 35 U.S.C. § 102

Claims 32-38 were rejected under 35 U.S.C. § 102 as allegedly being anticipated by and one of U.S. Patent Nos. 2,462,099 (Hickman), 3,221,496 (Haake), 3,635,030 (Schubert et al.), 5,892,172 (Candland et al.). These rejections are respectfully traversed.

Independent Claim 32 relates to a method of producing a gas that includes forming a single grain assembly from a plurality of individual solid propellant grains. The plurality of individual solid propellant grains are arranged so that at least two of the individual solid propellant grains are shaped and oriented in such a way that they are symmetrical with respect to each other about a line. Independent Claim 32 recites, *inter alia*, igniting the symmetrical individual solid propellant grains in the solid propellant grain assembly in such a way that the individual solid propellant grains are consumed in a manner that is substantially symmetrical with respect to the line.

Hickman relates to a rocket motor and discloses a plurality of generally cylindrical powder grains (17) mounted within a burster tube (16). Hickman further discloses arranging the powder grains (17) within the burster tube (16) to optimize burn surface area, flow area, and pressure vessel wall thickness. Haake relates to a ramjet motor and discloses symmetrically disclosed propellant grains (32, 42, 52, 66) that are configured to provide flow passages of various flow areas to improve burning efficiency. Nowhere do either of these references disclose, or even remotely suggest, forming a single grain assembly from a plurality of individual solid propellant grains, let alone igniting the symmetrical individual solid propellant grains in the solid propellant grain assembly in such a way that the individual solid propellant grains are

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consumed in a manner that is substantially symmetrical with respect to the line, as is recited in independent Claim 32.

Candland et al. relates to a solid propellant system and discloses igniting the grains simultaneously in order to optimize burn surface area and to tailor burn progression with respect to time. Schubert et al. relates to a method of generating burnable gases for thrust using two solid propellant charges and, in particular, an auxiliary propellant charge and a main propellant charge. Schubert et al. discloses that the main charge is fused by the burn-off of the auxiliary charge, and is evaporated during this process. Although these references do disclose symmetrically arranged grains, Applicants submit that these references fail to disclose, or even remotely suggest, igniting the symmetrical individual solid propellant grains in the solid propellant grain assembly in such a way that the individual solid propellant grains are consumed in a manner that is substantially symmetrical with respect to the line, as is recited in independent Claim 32.

In view of the foregoing, Applicants request reconsideration and withdrawal of the § 102 rejections.

Conclusion

Based on the above, independent Claim 32 is patentable over the citations of record. The dependent claims are also deemed patentable for the reasons given above with respect to the independent claims and because each recite features which are patentable in its own right. Individual consideration of the dependent claims is respectfully solicited.

The other art of record is also not understood to disclose or suggest the inventive concept of the present invention as defined by the claims.

Hence, Applicant submits that the present application is in condition for allowance. Favorable reconsideration and withdrawal of the objections and rejections set forth in the above-noted Office Action, and an early Notice of Allowance are requested.

If the Examiner has any comments or suggestions that could place this application in even better form, the Examiner is requested to telephone the undersigned attorney at the below-listed number.

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If for some reason Applicant has not paid a sufficient fee for this response, please consider this as authorization to charge Ingrassia, Fisher & Lorenz, Deposit Account No. 50-2091 for any fee which may be due.

Respectfully submitted,

INGRASSIA FISHER & LORENZ

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